National Transportation Safety Board

Safety Alert: "Prevent Aerodynamic Stalls at Low Altitude"

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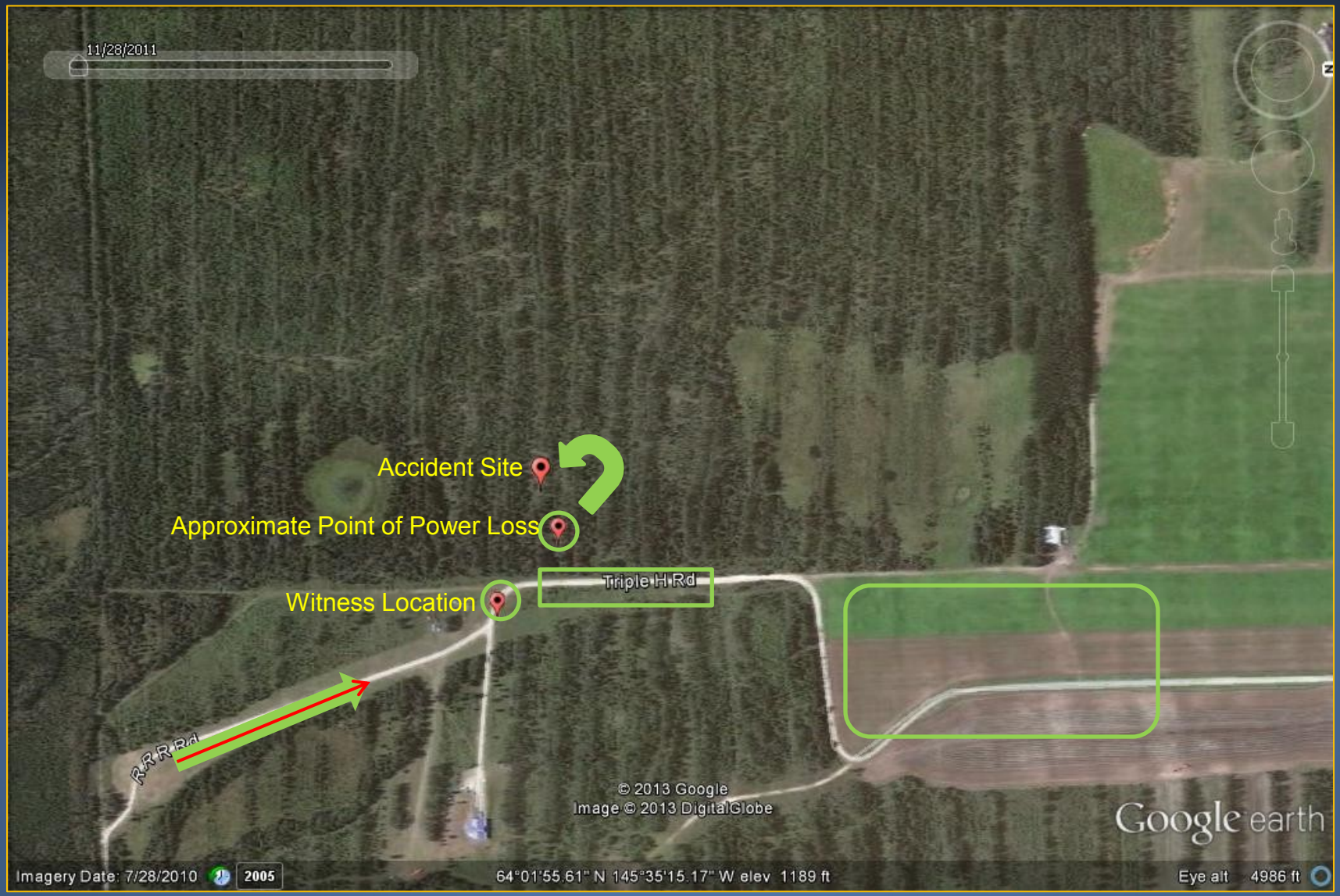
Stall/Spin After Takeoff Accident

Chris Shaver, IIC

Accident Flight

- Piper PA-12
- Loss of engine power during takeoff
- Pilot was fatally injured
- Multiple witnesses
- Steep left turn back toward the airstrip


11/28/2011
Accident Site
Approximate Point of Power Loss
Witness Location
Triple H Rd
R R R Rd
© 2013 Google
Image © 2013 DigitalGlobe
Google earth
Imagery Date: 7/28/2010
2005
64°01'55.61" N 145°35'15.17" W elev 1189 ft
Eye alt 4986 ft

NTSB

Accident Site

Missed Opportunities

- Pilot had options
- Don’t rely on instinct
- Accept what you have in front of you
- Turning around is NOT usually an option
- Maintain control of the airplane

ASI Perspectives

- Train for these events
- You don’t have to be a professional pilot to fly professionally
- Brief every takeoff, and know what you will do in an emergency before you depart
- Don’t try to save the airplane, save yourself

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Stall in Airport Traffic Pattern

Jennifer Rodi - IIC

Accident Flight

- Beech S-35
- Commercial pilot (18,000 hours) and flight instructor (7,700 hours) fatally injured

Scenario

- Touch and go: runway 26
- Wind 220°, 11 - 22 kts
- Turning from base to final, very steep bank
- Evidence consistent with aerodynamic stall, spin

Accident Site

Missed Opportunities

- Compensate for crosswinds
- Avoid steep bank angle when correcting course overshoot
- Do not allow situation to degrade to a loss of control

ASI Perspective

- Same mistakes, over and over
- Preventable:
  - Increased vigilance
  - Raised awareness of stall characteristics
- Education and experience
- Discontinue unstabilized approach

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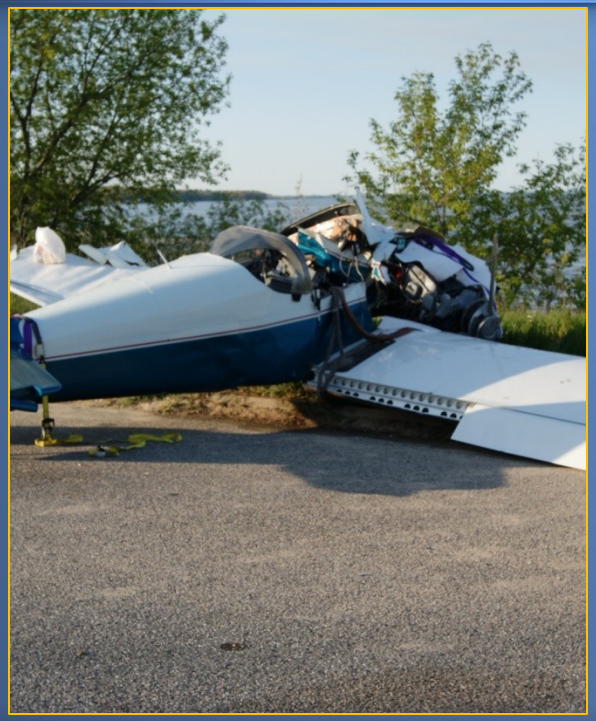

Aerodynamic Stall During Maneuvers

Craig Hatch, IIC

Accident Flight

- Vans RV-6
- Pilot seriously injured
- Contacted friend to watch for airplane

Pilot

- Private certificate
- 105 flight hours
- 15 hours in accident airplane

Accident Flight

- Pilot reported “treetop altitude”
- “Slowed down a bit” and “attention was focused outside”
- Tight left turn, “bump/drop,” and the left wing lost lift

Accident Flight

Missed Opportunities

- Avoid aggressive bank angle
- Understand E-AB may not have same warning as certified airplane
- Seek training in new/unfamiliar aircraft

			Angle of Bank			
Gross Weight 2,750 lbs			Level	30 degrees	45 degrees	60 degrees
			Gear and flaps down			
Power	on	knots	47	50	56	66
	off	knots	57	62	68	81

Figure 10-33 *Stall speed table* Extract from FAA-H-8083-25A

ASI Perspectives

- Transitioning: Piloting skills don't transfer with airplane
- Avoid temptation to "show off"
- Recognize signs of aerodynamic stall

Summary

Safety Alert: “Prevent Aerodynamic Stalls at Low Altitude”

- Accident summaries
- Links to educational resources
- “What can pilots do?”

What can pilots do?

- Seek training to fully understand stall phenomenon and AOA concepts
- Remember that a stall can occur at any airspeed, in any attitude, and at any engine power setting

What can pilots do?

- Remember that maneuvering loads, other factors increase stall speed
- Reduce AOA at first indication of stall – it's the most important immediate response

What can pilots do?

- Manage distractions when maneuvering at low altitude
- Resist temptation to “show off”
- Understand that stall characteristics can differ substantially between airplanes

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